

# PATENT SPECIFICATION



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## COMPLETE SPECIFICATION

### Improvements in and relating to Bleaching Materials particularly for the Bleaching of Hair

We, HANS SCHWARZKOPF, KOMMANDIT-GESELLSCHAFT, sole responsible partner Martha Schwarzkopf, organised under the laws of Germany, of 36 42, Alboinstrasse, 5 Berlin-Tempelhof, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10 For the bleaching of living hair use is made of hydrogen peroxide solutions which are made strongly alkaline with ammonia. The opinion is held that human hair is the more rapidly and intensively 15 lightened in colour the lower is the hydrogen ion concentration and the higher the hydrogen peroxide content of the bleaching material. Since in practice bleaching in hairdressers' establishments must be carried 20 out in from 20 to 30 minutes so it was thought to create the conditions therefor by corresponding standardisation of the means used. The high concentrations of solution, however, act disadvantageously 25 upon the skin.

Weak bleaching solutions have the disadvantage that they do not moisten the dark, always greasy fresh growth satisfactorily and run into the already 30 previously bleached less greasy hair, so that this is more strongly bleached and in some circumstances is even destroyed, while the dark fresh growth is only insufficiently lightened in colour. It has 35 been sought to avoid this disadvantage by adding to the hydrogen peroxide inorganic materials such for example as magnesium carbonate. Magnesium oxide has a particular significance as an addition 40 since, as in the case of ammonia, it has in hydrogen peroxide, and thus also in the bleaching solution, a relatively high pH value, namely above 11.

These materials, however, readily dry 45 and produce crumbly masses which interfere with the continued bleaching and therefore lead to non-uniform bleaching.

The object of the present invention is to avoid these disadvantages.

50 It has been surprisingly found that hydrogen peroxide of lower concentration than normally employed for this purpose

at relatively low pH value better bleaching can be obtained than with the highly concentrated materials hitherto employed, 55 when instead of free ammonium hydroxide buffered ammonium salts are added to the bleaching material. It is thus possible readily to reduce the pH number of the bleaching material considerably, namely 60 to from 7 to 9. The ammonium salts and salts of organic amines appear considerably to improve the bleaching effect, which enables operation with a considerably lower percentage of hydrogen peroxide. Thus, it is possible even with a 65 3% hydrogen peroxide solution which contains ammonium salts and has a pH value of 8.8, to obtain in the same time the same bleaching effect on living hair as is 70 obtained with a material which consists of magnesium oxide and 7 to 10% of hydrogen peroxide with a pH value of about 12. This knowledge is new. In place of the 75 ammonium salts also organic amines can be employed, and instead of the hydrogen peroxide, hydrogen peroxide compounds such as hydrogen peroxide urea, persalts such as perborates, percarbonates and so forth in such concentration as to yield 80 the same quantity of free oxygen.

In Specifications Nos. 289,156 and 273,414 mixtures comprising peroxide compounds and mono-ammonium phosphate are proposed for bleaching purposes. These 85 specifications however do not relate to the bleaching of hair and describe only mixtures wherein the concentration of the peroxidised compounds is very low, i.e. considerably below the figure specified 90 herein as being the approximate minimum suitable for use in the bleaching of hair.

The bleaching agent according to the invention is advantageously mixed with 95 thickening materials in order to enable it to moisten the greasy portion of the hair more satisfactorily. In order to avoid the disadvantages above referred to, however, inorganic materials such as talcum, kaolin and chalk are avoided and according to 100 the invention use is made of readily swelling substances of organic character such, for example, as polysaccharides and albuminous materials of high molecular weight

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which are not attacked by the oxygen evolved or are attacked only to a very slight degree. The choice can be so made that a transparent paste is obtained which renders it possible to follow the bleaching process uninterruptedly with the eye. Such materials are for example starch, tragacanth, methyl cellulose, gum arabic, gelatine, casein, dextrine and others.

10 The bleaching material may contain wetting agents such for example highly sulphonated oils, fatty alcohols, alcohol sulphonates and others. In order to avoid a disadvantageous action with porous hair the bleaching agent may also contain additions of waxes, lipoids such as lecithin and cholestrin, fatty alcohols and similar fat materials.

The advance associated with the new material resides in the fact that with careful and adequate bleaching and brightening action upon the hair, irritation of the skin can be avoided which usually readily arises with the use of higher concentrations. A further advance resides in the fact that the magnesium and calcium compounds which are extraordinarily deleterious for the hair are excluded and that materials, which as a result of their sharp crystalline structure lead to skin irritation such as silicic acid, are avoided. It is moreover possible by the use of the usual concentrations to arrive at a still greater bleaching effect than hitherto.

35 The following examples illustrate the composition of bleaches produced according to the invention :

- |    |          |   |
|----|----------|---|
| 1) | 65 parts | soluble starch.                           |
|    | 2 "      | East Indian Tragacanth.                   |
| 40 | 4 "      | synthetic wax.                            |
|    | 3.5 "    | ammonium chloride.                        |
|    | 17 "     | sodium bicarbonate.                       |
|    | 4 "      | tertiary sodium phosphate.                |
|    | 4 "      | sodium lauryl sulphonate.                 |
| 45 | 200 "    | water.                                    |
|    | 20 "     | hydrogen peroxide 30%.                    |
| 2) | 30 parts | sodium perborate.                         |
|    | 10 "     | ammonium chloride.                        |
|    | 2 "      | sodium salt of aleylmethyl taurinic acid. |
| 50 | 100 "    | water.                                    |
|    | 25 "     | potato flour.                             |

- |    |        |                                 |    |
|----|--------|---------------------------------|----|
| 3) | 1 part | methyl cellulose.               |    |
|    | 1 "    | East Indian tragacanth.         |    |
|    | 5 "    | trisodium phosphate.            | 55 |
|    | 20 "   | sodium bicarbonate.             |    |
|    | 10 "   | trimethyl amon chloride.        |    |
|    | 30 "   | hydrogen peroxide urea (solid). | 60 |
|    | 90 "   | water.                          |    |

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A bleaching material for the bleaching of living hair, having a pH of 7 to 9 and comprising buffered ammonium salts or buffered salts of organic bases and one or more substances liberating oxygen such as hydrogen peroxide, hydrogen peroxide compounds or persalts, the oxygen liberating substances being present at least in amount equivalent to approximately 3% by weight of hydrogen peroxide.

2. A method for bleaching living hair by means of materials as claimed in Claim 1 characterised by the use of a mixture which also contains high molecular transparent swelling agents.

3. A bleaching material as claimed in claim 1 wherein the active ingredients are bound together by means of high molecular swelling materials.

4. A bleaching material as claimed in either of claims 1 and 3, wherein one or more wetting and penetrating agents is or are incorporated.

5. A bleaching material as claimed in any of claims 1, 3 and 4, wherein additions of reviving substances such as waxes and lipoids are contained.

6. Bleaching materials particularly for bleaching hair substantially as described.

Dated this 19th day of November, 1935.

DICKER, POLLAK, MERCER,

TENCH & MEYER,

Chartered Patent Agents,

20 to 23, Holborn, London,

E.C.1.

Agents for the Applicants.